REMARKS

Presently, claims 96-116 are pending in the application. A Request for Continued Examination ("RCE") under 37 C.F.R. §1.114 is being filed herewith. Claims 53-95 have been canceled. New claims 96-116 have been added to more clearly define and particularly point out the present invention. Support for the features of new claims 96-116 may be found, for example, in canceled claims 53-95 and at page 29, line 28 – page 32, line 1 and at page 33, line 21 – page 34, line 9 of the specification. Accordingly, no new matter has been added to the application by the foregoing amendments.

Prior Art Rejection – § 102(e)

The Examiner has rejected claims 76, 85-87 and 95 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,177,931 to Alexander *et al.* ("Alexander").

Although not necessarily agreeing with the Examiner, claim 73 has been canceled. Accordingly, the Examiner's §102(e) rejection over Alexander is moot. However, to the extent that this rejection is applied to any of the presently pending claims, Applicants respectfully traverse this rejection.

Alexander teaches improvements to electronic program guides ("EPGs"), including viewer interaction capabilities, opportunities for advertisers to reach viewers and creating of viewer profiles. Alexander's system allows the viewer to interact with the EPG, including selecting programming (including advertisements) for viewing and/or recording. The user may also interact with the EPG by scrolling through the listings which are not displayed on the initial screen. The EPG in Alexander collects information about the viewer, either by obtaining the requested information directly from viewer input or learning the desired information by recording the viewer's "actions and circumstances surrounding those actions" with the EPG (see column 28, lines 30-59 of Alexander). The information that the EPG records includes instructions provided to the EPG (e.g., a channel change) as well as the time that that change was instructed and the programming switched to and from as a result of the change. The EPG also records the absence of user interaction. Alexander teaches that a "viewer profile analysis program"

performs a "simple statistical analysis" of the collected data and, combined with the viewer's profile information, develops "viewer characteristics" (see column 29, lines 30-60 of Alexander). The profile analysis program also compares one viewer profile to other viewer profiles to further aid in displaying similar content to similar viewers. Alexander then uses the viewer characteristics to customize the EPG, so that the viewer is presented with programming and/or advertisements that are likely to be of interest, both in terms of content and order of display. Alexander also teaches that the EPG may display advertisements based on specific programming that the viewer is currently watching or that certain advertisements may be assigned to particular "classes" of programming.

Applicants' invention includes monitoring viewer interactions with a multimedia device and then determining certain characteristics about those interactions. For example, the present invention may determine that the viewer interaction characteristics (such as rate of channel change and time of day) indicate that there were six different types or "sessions" of viewer interaction that were monitored. Accordingly, Applicants' invention then creates six groups according to these viewer interaction characteristics. Heuristic rules are applied to these groups, such that a viewer characteristic is assigned to each of the groups. Finally, based on the assigned characteristics, Applicants' invention infers the size of the household. Thus, if the six groups were assigned four different distinct viewer characteristics based on heuristic rules, the present inventive method might infer that the household size is four, even though there were clearly six different styles of viewer interaction.

Independent claim 96, recites:

> In a video network, a computer-implemented method of determining size of a household, the method comprising:
>
> (a) monitoring viewer interactions with a multimedia device;
>
> (b) determining viewer interaction characteristics corresponding to the viewer interactions;
>
> (c) creating one or more interaction groups based on the viewer interaction characteristics;

(d) applying one or more heuristic rules to the interaction groups, wherein the heuristic rules assign a viewer characteristic to each interaction group; and

(e) inferring the size of the household based on the number of distinct viewer characteristics.

Alexander does not disclose "applying one or more heuristic rules" to "interaction groups," as recited in independent claim 96. Applicants respectfully, but strenuously, disagree with the Examiner's assertion that that Alexander teaches "retrieving heuristic rules." At no point does Alexander discuss "heuristic" rules. Applicants' acknowledge that Alexander utilizes a "Profile Program" that "performs multiple levels of sophisticated analysis and learning involving numerous comparisons...to develop of multi-dimensional profile of the viewer" (see column 30, lines 1-7). The data used by the Profile Program is based on a "simple statistical analysis" and "basic viewer profile data". However, Alexander's discussion of the Profile Program and the various data points that are utilized therein does not disclose, teach or suggest the use of "heuristic rules". In contrast, in Applicants' invention, heuristic rules that are composed of both logical heuristic rules and heuristic rules expressed in terms of conditional probabilities are applied to (see page 13, lines 18-24 of the specification) are applied and assign a "viewer characteristic" to each of the interaction groups. Furthermore, Alexander does not disclose that any such rules are applied to different "interaction groups". That is, although Alexander discloses that a viewer's preferences or profile may be compared to profiles of other viewers, Alexander's system does not apply rules to different groups to arrive at a conclusion about one or more of those groups. In Alexander, the Profile Program simply analyzes data about one viewer's interactions with the EPG and draws conclusions about that viewer's preferences.

Alexander also does not disclose "inferring the size of the household based on the number of distinct viewer characteristics." Alexander does not include any discussion directed to determining household size. Although Alexander's Profile Program determines a viewer's preferences and demographic information about the viewer based on observed interactions of that viewer, Alexander does not infer the household size in any manner, whether corresponding to that viewer or not. For example, Alexander

discloses that the analysis of the Profile Program determines Viewer Characteristics, including such factors as whether the viewer is married or has children. However, such characteristics do not teach "inferring the size of the household based on the number of distinct viewer characteristics" as recited in independent claim 96. That is, "whether a viewer has children" does not lead to an inference, based on heuristic rules, as to the size of a household. Even if such a connection could be made, it is not taught by Alexander. Accordingly, Alexander does not disclose all of the features of independent claim 96. Thus, independent claim 96 is believed to be allowable over Alexander.

New independent claims 102 and 108 recite "applying one or more heuristic rules to the viewer interaction characteristics, wherein the heuristic rules assign one or more viewer characteristics based on the interaction characteristics; and inferring the size of the household based on the number of distinct viewer characteristics." For the same reasons discussed above with respect to independent claim 96, Alexander does not disclose all of the features of independent claims 102 and 108. Accordingly, independent claims 102 and 108 are believed to be allowable over Alexander.

Dependent claims 97-101, 103-107 and 109-116 are allowable at least by their dependency on independent claims 96, 102 and 108, respectively. Reconsideration and withdrawal of the Examiner's § 102(e) rejection of claim 73 are respectfully requested.

Prior Art Rejection – § 103(a)

The Examiner has rejected claims 53-56, 60-71, 73-74, 77-79 and 88-90 under 35 U.S.C. §103(a) as being unpatentable over Alexander in view of International Publication No. WO 99/01984 to Maissel *et al.* ("Maissel"). Although not necessarily agreeing with the Examiner, claims 53-56, 60-71, 73-74, 77-79 and 88-90 have been canceled. Accordingly, the Examiner's §103(a) rejection over Alexander in view of Maissel is moot. However, to the extent that this rejection is applied to any of the presently pending claims, Applicants respectfully traverse this rejection.

For the same reasons discussed above with respect to the Examiner's anticipation rejection over Alexander, Applicants respectfully submit that Alexander does not teach or

suggest all of the features recited in new independent claims 96, 102 and 108. Thus, claims 96, 102 and 108 are believed to be allowable over Alexander.

Maissel teaches an "intelligent agent" to be used in conjunction with an electronic program guide ("EPG"). The agent uses a preference profile to customize the EPG based, for example, on actually viewed programs for the purpose of eventually targeting desired advertisements to the consumer. The preference profile may include rules (based on current program characteristics or programs viewed), such that the agent "learns" the viewer's preferences. The agent may then broadcast programs according to preferences obtained from the viewer profile and store programs and/or advertisements locally at the viewer's terminal.

Maissel does not teach or suggest the use of heuristic rules in determining the preference profile. Thus, Maissel does not teach or suggest "applying one or more heuristic rules to the viewer interaction characteristics...," as claimed by Applicants. Furthermore, at no point does Maissel discuss determining a household size, let alone inferring household size based on a number of distinct viewer characteristics as assigned by the heuristic rules. Accordingly, Maissel does not teach or suggest all of the features of independent claims 96, 102 and 108.

Since neither Alexander nor Maissel individually teaches or suggests all of the elements recited in independent claim 96, 102 and 108, Applicants respectfully submit that, even if Alexander and Maissel are properly combinable, such a combination would still not teach or suggest the invention of claims 96, 102 and 108. This is because such a combination would still not teach or suggest "applying one or more heuristic rules to the viewer interaction characteristics...; and inferring the size of the household based on the number of distinct viewer characteristics." Accordingly, new independent claims 96, 102 and 108 are believed to be allowable over the combination of Alexander and Maissel. Reconsideration and withdrawal of the Examiner's rejection of claims 53-56, 60-71, 73-74, 77-79 and 88-90 are respectfully requested.

The Examiner has rejected claim 81 as being unpatentable over Alexander in view of U.S. Patent No. 5,801,747 to Bedard ("Bedard"). As discussed above with respect to the Examiner's anticipation rejection, independent claims 96, 102 and 108 are believed to be allowable over Alexander. Applicants respectfully submit that Bedard does not teach

or suggest any of the elements missing from Alexander. Thus, independent claims 96, 102 and 108 are believed to be allowable over the combination of Alexander and Bedard. Reconsideration and withdrawal of the Examiner's rejection of claim 81 are respectfully requested.

The Examiner has rejected claim 72 as being unpatentable over Alexander and Maissel, and further in view of Bedard. As discussed above with respect to the Examiner's obviousness rejection over claims 53-56, 60-71, 73-74, 77-79 and 88-90, independent claims 96, 102 and 108 are believed to be allowable over the combination of Alexander and Maissel. Applicants respectfully submit that Bedard does not teach or suggest any of the elements missing from this combination. Thus, independent claims 96, 102 and 108 are believed to be allowable over the combination of Alexander, Maissel and Bedard. Reconsideration and withdrawal of the Examiner's rejection of claim 72 are respectfully requested.

The Examiner has rejected claims 75, 80 and 91 as being unpatentable over Alexander and Maissel, and further in view of U.S. Patent No. 5,758,259 to Lawler ("Lawler"). As discussed above with respect to the Examiner's obviousness rejection over claims 53-56, 60-71, 73-74, 77-79 and 88-90, independent claims 96, 102 and 108 are believed to be allowable over the combination of Alexander and Maissel. Applicants respectfully submit that Lawler does not teach or suggest any of the elements missing from this combination. Thus, independent claims 96, 102 and 108 are believed to be allowable over the combination of Alexander, Maissel and Lawler. Reconsideration and withdrawal of the Examiner's rejection of claims 75, 80 and 91 are respectfully requested.

The Examiner has rejected claims 82-84 and 92-94 as being unpatentable over Alexander in view of U.S. Patent Publication No. 2002/0095676 to Knee et al. ("Knee"). As discussed above with respect to the Examiner's anticipation rejection, independent claims 96, 102 and 108 are believed to be allowable over Alexander. Applicants respectfully submit that Knee does not teach or suggest any of the elements missing from Alexander. Thus, independent claims 96, 102 and 108 are believed to be allowable over the combination of Alexander and Knee. Reconsideration and withdrawal of the Examiner's rejection of claims 82-84 and 92-94 are respectfully requested.

The Examiner has rejected claims 57-59 as being unpatentable over Alexander and Maissel, and further in view of Knee. As discussed above with respect to the Examiner's obviousness rejection over claims 53-56, 60-71, 73-74, 77-79 and 88-90, independent claims 96, 102 and 108 are believed to be allowable over the combination of Alexander and Maissel. Applicants respectfully submit that Knee does not teach or suggest any of the elements missing from this combination. Thus, independent claims 96, 102 and 108 are believed to be allowable over the combination of Alexander, Maissel and Knee. Reconsideration and withdrawal of the Examiner's rejection of claims 57-59 are respectfully requested.

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that the Examiner's rejections have been overcome, and that the application, including claims 96-116, is in condition for allowance. Reconsideration and withdrawal of the Examiner's rejections and an early Notice of Allowance are respectfully requested.

Respectfully submitted,

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